We can now understand the vestiges in Egypt of a popular belief that the Pleiades are in some way connected with the Great Pyramid, the existence of which was observed with a very natural feeling of surprise by Prof. Piazzi Smyth.

I am convinced that the evidence will be regarded as conclusive that the widespread identities which exist as to the year of the Pleiades and its traditions cannot, as Dr. Tylor assumes apparently, have grown up everywhere from the peculiar shape or position of these stars, but that they must be a heritage, if not from a common ancestor, at least from a common source.

Tangier, January 25 R. G. HALIBURTON

ON THE VEGETABLE FOOD OF THE NEW ZEALANDERS IN PREHISTORIC TIMES

WE are indebted to the now venerable Colenso for a deeply instructive and interesting treatise on the vegetable food of the Maoris in the days before Captain Cook's visit. After a residence of almost half a century among these people, during which he has most assiduously studied their ways, manners, and literature, none could write on any subject touching their history with more assurance. Two gross errors have largely and repeatedly been industriously published concerning these Maori—that they were ignorant of all art, and that they suffered from want of food; and from these assumed facts the deduction has been made that therefore they were when first discovered in a savage and starving state, out of which they have been raised by their intercourse with Europeans. As to the want of food, Mr. Colenso asserts that the natives of the North Island had at this time attained to even a high system of agriculture, and that they were passionately fond of cultivating their grounds.

The ancient New Zealander had plenty of good food, but only such as was to be obtained by labour. For them nature had no lavish gifts—no bread-fruit, no cocoa-nuts, no plantains or bananas—fruits from trees growing almost spontaneously and yielding without toil their delights to mankind. But, on the contrary, the Maoris got their vegetable food by constant industry and hard labour, and this was doubtless in favour of the development of the race, helping the "survival of the fittest." And not only were they great cultivators of the soil, but when first known they were in a state of civilisation far beyond that in which our own forefathers were when Cæsar first led his victorious army among them; indeed Colenso doubts if any ancient people had ever—wanting the knowledge of the metals—advanced so far; and he in a very pleasant manner reminds us that, as Xenophon remarked, "Agriculture is the nursing mother of the arts," and that the agriculturist is bound to the soil; it becomes sacred to him; he is compelled to build houses; unlike the nomad shepherd. Hence comes the town, and then the fortified places of strength, all of which the Maoris had, and none of which their neighbours the Australians and Tasmanians ever dreamt of.

One of the oldest legends of the Maoris treats of their favourite and beneficent hero Maui as catching and binding the sun to prevent his travelling so fast, *so that man might have longer daylight to work in.* In their plantations all worked alike—the chief, his wife, his slave. It was a pleasing sight to see the evenness of their tillage, the regularity of their planting and sowing. In planting the *kumara* and the *taro* the plants were generally set about two feet apart in true quincunx order, with no deviation from a straight line when viewed in any direction; weeds were most rigorously kept down. One peculiarity Colenso calls special attention to, one in which they seemed to differ from all other agricultural races—they never used any kind of manure or fertiliser, unless indeed under the latter denomination might come the fresh annual layers of dry gravel which they spread over their kumara plantations. Their whole inner man seemed to revolt against the idea of employing decaying substances, and when the early missionaries first used such substances in their kitchen gardens, it was brought against them as a charge of high opprobrium; and even in later days, when they saw the beneficial effects arising from the use of manure on potato-growing, they could not get over their prejudices, but chose rather to prepare fresh ground every year, doing this generally by felling and burning the timber on the outskirts of the forest, and with all the extra labour of fencing against pigs.

Their, in every respect, most important food-plant was the Kumara (a variety of the sweet potatoe); the use of it would seem to date from prehistorical times, as their many legends evidently show. In good seasons and soils its yield was plentiful, and it is interesting to remark a fact in connection with this crop, that may bring to the reader's mind the memory of the same thing being done in Ireland with the potatoes. Long before the tubers of the Kumara are of a full size, these are laid under contributions, each plant being visited in turn, and the largest tubers are excavated by means of a small sharp-pointed spade, after which the plant is "earthed" up; these stolen tubers are greatly esteemed. The general digging-up occurs in late autumn, but always before there is any expectancy of frost, and the tubers are carefully sorted. Colenso especially noted the number of well-marked varieties of Kumara, several of which were of great antiquity, and permanent. Over thirty varieties are distinguished, and some old sorts are known to be lost. All the sorts came true, and never varied except as to size. As all of these came down from the cultivation of the tubers, the question at once arises, How were they at first derived? The oldest Maoris never heard of the Kumara flowering, nor did they remember of the introduction of a new sort, but always said they had them of old from their forefathers. In the striking story of the murder of Rangiwhakaoma, translated by Colenso, "a lad, son of Te Aotata, is asked, 'Whither art thou going?' and he replies, 'To look at the Kumara in thy store;' but he is persuaded to descend into the unseen world, in order to see the beautiful Kumara there, which, when he saw the great heaps of, and was lost in admiring them, lo! the whole piled-up stack of Kumara was made to fall suddenly upon him, so that he was immediately killed;" and here the translator adds a practical note to the effect that, in order to let the air in and keep the tubers from mould, they were always packed in great loose heaps, and under cover. There is little doubt that, if the growers of potatoes had adopted some such method of storing their crops as these Maori did with their sweet potatoes, the loss from the potato disease would not have been so great as it very notoriously has been among the stored crop.

The second plant most generally cultivated by the Maori was the *taro*—this was propagated by off-sets; but, from its being a perennial, and always in season, its tubers were not stored, but dug up when wanted. Of this plant over twenty varieties were known, which, like the Kumara, differed greatly in size, quality, and in the colour of the flesh. This tuber played a very important part in many of the higher ceremonial observances—as at the naming of a newly-born child of a chief; at the death of a chief; at the exhumation, which in due time always followed; and also at the visits of welcome strangers.

The third food-plant greatly cultivated was a gourd called *hue*. This noble and highly useful plant was annually raised from seed, and was the only food-plant so propagated by the Maoris, and yet curiously enough of this plant, though yielding seed in great plenty, there is only one species and there are no varieties. As an article of food the fruit was only used when young, and always baked, like the *Kumara* and *taro*, in a common earth oven, and it was eaten like these both hot and cold. It came into use in the summer, before the *Kumara*

crop was ripe. The ripe and dried fruits were used for holding water, oils, and cooked food. Often these vessels were handed down as heirlooms.

First in importance among their wild or uncultured food-plants is the fern stem (*Pteris esculenta*) *amhe*, *roi*, or *marohi*. Good edible fern root is not to be found everywhere, and in some districts it is very scarce. Colenso describes a hill of loose rich earth in the interior, which had been long famed for its fern root, and for the occupancy and use of that hill for digging the root, several battles had been fought. All fern root "diggings" were rigidly preserved. There was a regular set time for digging these rhizomes in the spring and early summer months, when the starch abounded in the cells. The root was never used green. The dried root was slightly soaked in water, washed a little, then beaten, and when properly finished, it would break with the fracture of a good biscuit. It was a very nutritious food, much eaten with fresh fish, and steeped in the sweet luscious juice of the berry-like petals of the *tutu* (*Coriarea ruscifolia*). It is related that the chief Kiinui, who had been carried off by Commander de Surville in December, 1769, and who died of a broken heart at sea, March 24, 1770, while he ate heartily of all the ship's provisions, pined after the fern root. It is interesting to note that Capt. Cook, on the first voyage, left Doubtless Bay—Kuniu's home—just a day before de Surville entered it. Most of the old traditions, and some of the deliciously quaint old songs of the Maori, sing the praises of this food, even giving it a heavenly origin. It is not without interest to note that the young fronds called *monehu*, just as they made their appearance in spring, were also eaten as asparagus would be with us. This is also, we believe, the custom in Canada.

As in some manner accounting for Cook's view of their condition, Colenso reminds us that Capt. Cook's first visit was at the very period when their *planting* season was just over, and this, the time of the utmost scarceness of *Kumara* and *hue*, that their plantations were far apart and strictly tabooed. Still, Cook says that he saw at Islaga Bay, "from 150 to 200 acres under crop," and that too in a place where, he adds, "We never saw 100 people." Colenso has no excuse for more modern writers, some of whom by long residence, ought to have known better. As to there ever being a "great want of food," the old and intelligent Maoris of the North Island have always denied this, stating that though they had not such good natural gifts as the Europeans—fruits, roots, and vegetables—and though they could only obtain their food by labour, yet that by labour in some form or other, they could obtain enough for all their needs.

SAMUEL SHARP

WE regret to have to announce the death of the well-known geologist and archæologist, Mr. Samuel Sharp. He was the son of Mr. Stephen Sharp of Romsey, Hants, and was born in the year 1815. During his long residence at Stamford, and subsequently in the neighbourhood of Northampton, he made very extensive and varied collections illustrating the geology and archæology of the midland districts. A portion of his fine geological collection was some years ago purchased by the trustees of the British Museum, while another portion has been for a long time placed on exhibition in the Northampton Museum. This latter collection, which very admirably illustrates the geology and palæontology of the district, has, we believe, been left under certain conditions to the town of Northampton, and it will form a valuable nucleus for a local collection, illustrating the natural history of the surrounding district, such as we may hope in time to see rising in all our principal provincial towns. Mr. Sharp was a man of large culture and varied tastes. His papers "On the Oolites of Northamptonshire," read before the Geological Society, are full of most valuable information concerning a district to which he devoted his life-long studies. He wrote a little text-book, "The Rudiments of Geology," which has passed through two editions, and which we have already had occasion to mention favourably in these columns. As an archæologist Mr. Sharp was not less widely known than as a geologist. On all questions of local antiquities he was one of the highest authorities in the Midland district, and many valuable papers relating to these subjects were contributed by him to the local journals. But it was as a numismatist that Mr. Sharp especially distinguished himself. During the last thirty years he by unwearied exertions succeeded in bringing together an unrivalled collection illustrating the productions of the famous Stamford Mint. His valuable memoir on these interesting coins, with it several supplements, was published by the Numismatic Society, and constitutes the best authority on the subject. As a consequence of failing health Mr. Sharp's familiar face has for some years been missed from the geological and archæological societies, in the affairs of which he so long took an active part. His genial manners and hospitable nature endeared him to a large circle of friends, and his loss will be deeply felt. His wide and varied stores of knowledge were always placed at the service of those who sought his aid, and his influence in encouraging the study of his favourite science was productive of much good in the district where he resided. Many a young collector and student of science was indebted to him for useful and friendly advice, and his energies could always be enlisted in aid of any projects which had for their aim the advancement of science, and the diffusion of sound knowledge in his adopted county. Mr. Sharp was a Fellow of the Geological and Numismatic Societies, as well as of the Society of Antiquaries. Some time ago he conducted the members of the Geologists' Association over the district with which he was so well acquainted, explaining to them those geological features which he had himself so carefully worked out. In spite of increasing infirmities and great sufferings Mr. Sharp steadily laboured on in the cause of his favourite sciences, and only a few weeks before his death read several interesting memoirs before the local Antiquarian and Natural History Societies. He died on January 28, in the sixty-eighth year of his age. In him English geology and archæology have lost one of those enthusiastic and disinterested labourers, to whose exertions the progress of these sciences has in the past been so largely due.

THE AURORA [1]

I.

IT has often been remarked that the importance of Arctic exploration is not so much in the geographical discoveries which can now be made during our slow advance towards the North Pole, as in the additions which accrue to physical geography by the observer; quite a new field of observations being opened to the observer during his stay in Arctic regions. The accuracy of this remark is completely confirmed by the new and most important conclusions as to the nature of auroræ which Baron Nordenskjöld has arrived at during the wintering of the *Vega* in the neighbourhood of Behring Strait.

The auroræ observed at the winter quarters of the *Vega* were mostly very feeble and had nothing of the important character they often have in other latitudes. "There are no auroræ, at least none worthy of this name," said one of the *Vega's* crew. But precisely because of their less brilliant character, of their simplicity, so to say, and of their regularity, Nordenskjöld was enabled to arrive at

[1] A. E. Nordenskjöld, "Om norrskenen under *Vegas* öfvervintring vid Berings Sund, 1878-79," in "*Vega* Expeditionen Vetenskapliga Arbeten." The Scientific Work of the *Vega* Expedition, part 1, pp. 401-452.)